

HILL STREAM FISHES OF THE NORTHERN PART OF UKHRUL DISTRICT, MANIPUR¹LAISHRAM KOSYGIN² AND WAIKHOM VISHWANATH³¹Accepted October, 2003² Loktak Development Authority, Lamphelpat 795 004, Manipur, India. Email: laishramkosygin@yahoo.com³Department of Life Sciences, Manipur University, Canchipur 795 003, Manipur, India. Email: vnath54@yahoo.co.in

A survey of the fish fauna of the northern part of Ukhrul district of Manipur has been undertaken. A total of 44 species belonging to 25 genera and 9 families have been recorded. The fauna is a mixture of endemic hill stream, Burmese, Indochinese and widely distributed forms.

Key words: Hill stream fishes, Ukhrul district, Manipur

INTRODUCTION

The northern part of the Ukhrul district of Manipur is drained by the Chalou (Chammu river) and Laniye rivers, which originate at about 2,616 m above msl. The Laniye river, which is formed mainly by three brooks, namely Akbong lok ('lok' means brook in Manipuri), Masangkong lok and Langdang Turel, meets the Zerry lok, which comes from eastern side of Senapati district of the state. It then flows northeast forming the state boundary between Manipur and Nagaland. Later, the river meets the Tizu river of Nagaland near Jessami. Further, Tizu river meets the Chalou river at Akash Bridge. Important tributaries of the Chalou river are Sirohi lok, Poi, Wanze, Ringnga, Momo, and Riori. Tizu river finally joined the Chindwin river in Myanmar. In this part of the state, the monsoon is quite prominent and maximum rainfall occurs in June (Singh 1989). The soil of this region is red loamy and slightly acidic.

Despite the occurrence and distribution of a vast network of rivers and streams in this part of Ukhrul district, which are totally isolated from the other rivers of the state, there is no detailed information on its fish fauna. The earliest available literature on the fishes of Ukhrul district was that of Chaudhuri (1912). The report of Hora (1937) on the fishes of upper Chindwin drainage was based on collections from the Khunukong and Namyra rivers, which are in eastern Ukhrul. The present paper reports the fishes of the northern part of Ukhrul district, which is drained by the Chalou and Laniye rivers.

MATERIAL AND METHODS

Fishes were collected from the hill streams of northern part of Ukhrul district at six stations, namely Chingai, Khamsom, Jessami, Thetsi, Tolloi and Tusom CV during 1995-1998 (Fig. 1). All the specimens are preserved in 10% formalin and deposited in the Manipur University Museum of Fishes

(MUMF). Fishes were identified following Jayaram (1981), Talwar and Jhingran (1991) and other relevant literature. The species were confirmed by comparing them with the type and other specimens in the Zoological Survey of India, Kolkata.

RESULTS AND DISCUSSION

Species-wise distribution of fishes in different localities in the northern part of Ukhrul district, Manipur, along with the total number of specimens examined for taxonomic study are given in Table 1. The present collection includes 44 species belonging to 25 genera, 9 families and 3 orders. The Order Cypriniformes represented maximum number of species (33), followed by Siluriformes (9) and Perciformes (2). Among the 25 genera, *Garra* showed maximum diversity, which was represented by 8 species, the next genus being *Schistura* with 5 species.

The collection included groups of fishes both with and without specific devices for adaptation in torrential water. *Semiplotus*, *Schizothorax*, *Barilius*, *Tor*, *Neolissochilus*, *Raiamas*, *Bangana*, *Brachydanio*, and *Danio* are genera with no special modifications, except for compression of body, with rounding off and tapering towards the anterior and posterior extremities. On the other hand, *Glyptothorax*, *Pseudecheneis*, *Garra*, *Myersglanis*, and *Schistura* are genera with special structural modifications. Similar observations in conformity with those of Hora (1922) were made in respect to the adaptations of the fishes to torrential stream habitats. The study sites have an altitudinal variation from 544 m above msl to 2,616 m above msl. Accordingly, the gradient of water current varies and also distribution of fishes. Species of genera such as *Barilius*, *Mastacembelus*, *Semiplotus*, *Neolissochilus*, *Tor*, *Schizothorax*, *Poropuntius*, *Garra*, *Schistura*, *Channa*, *Glyptothorax*, *Lepidocephalus*, and *Amblyceps* were found to be widely distributed. Some fishes like *Brachydanio*, *Danio*, *Esomus* and *Puntius* inhabit shallow waters with moderate to

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Table 1: Species-wise distribution of fishes in different localities in the northern part of Ukhrul district, Manipur
 (N is the total number of specimens examined for taxonomic study)

Scientific Name	Local Name	Distribution						N	Remarks
		Chingai	Khamsom	Jessami	Thetsi	Tolloi	Tusom CV		
Order: Cypriniformes									
Family: Cyprinidae									
Subfamily: Cyprininae									
1. <i>Bangana dero</i> (Hamilton)	Allah/Khabak	-	-	1	1	-	-	2	M
2. <i>Neolissochilus hexagonolepis</i> (McClelland)	Khaicham/ Ngara	1	2	2	4	-	7	16	FP, W
3. <i>Neolissochilus stracheyi</i> (Day)	Khaicham/ Ngara	-	-	4	-	-	-	4	FP
4. <i>Puntius sophore</i> (Hamilton)	Khaiwonla/ Phabounga	-	-	-	2	-	-	2	-
5. <i>Puntius ticto ticto</i> (Hamilton)	Khaiwonla/ Ngakha	4	-	-	-	3	-	7	-
6. <i>Poropuntius burtoni</i> (Mukerji)	Rar/ Ngapeila/ Aasho	-	5	1	5	-	-	11	FP, W
7. <i>Semiplotus manipurensis</i> Vish. & Kosygin	Khi-Lu-Nu/ Igella/ Ngakoi	5	2	-	14	-	-	21	FP, W
8. <i>Tor putitora</i> (Hamilton)	Khiehue/ Ngara	-	-	-	4	-	1	5	FP
9. <i>Tor tor</i> (Hamilton)	Khiehue/ Ngara	-	-	-	2	-	3	5	FP
Subfamily: Rasborinae									
10. <i>Barilius barna</i> (Hamilton)	Marei/ Abhishi/ Ngawa	-	-	-	-	-	1	1	-
11. <i>Barilius ngawa</i> Vish. & Manoj.	Marei/ Abhishi/ Ngawa	-	1	4	16	-	10	31	FP, W
12. <i>Brachydanio acuticephalus</i> (Hora)	Nunga	5	-	-	-	-	-	5	-
13. <i>Danio aequipinnatus</i> McClelland	Khipuli/ Nunga	-	-	-	4	-	2	6	-
14. <i>Danio naganensis</i> Chaudhuri	Khipuli/ Nunga	2	3	1	4	-	7	17	W, EMN
15. <i>Esomus danricus</i> (Hamilton)	Muhialei/ Ngasang	-	-	-	-	-	3	3	-
16. <i>Raiamas guttatus</i> (Day)	Abhishi/ Ngawathongong	-	-	-	1	-	-	1	M
Subfamily: Schizothoracinae									
17. <i>Schizothorax richardsonii</i> (Gray)	Majong/ Vansu/ Sananga	1	3	-	-	3	2	9	FP, W
Subfamily: Garrinae									
18. <i>Crossocheilus burmanicus</i> Hora	Ungri/ Ngaroi	-	-	1	-	-	-	1	R
19. <i>Garra compressus</i> Kosygin & Vish.	Masah/ Ngamusangum	-	3	-	-	-	-	3	-
20. <i>Garra elongata</i> Vish. & Kosygin	Masah/ Ngamusangum	-	-	-	-	4	-	4	-
21. <i>Garra gotyla gotyla</i> (Gray)	Matrao/ Ngamusangum	-	-	-	-	-	3	3	-
22. <i>Garra kempi</i> Hora	Matrao/ Ngamusangum	1	3	-	1	-	-	5	-
23. <i>Garra lissorhynchus</i> (McClelland)	Matrao/ Ngamusangum	2	10	3	2	-	-	17	W
24. <i>Garra naganensis</i> Hora	Matrao/ Ngamusangum	4	3	-	9	1	1	18	W
25. <i>Garra nasuta</i> (McClelland)	Matrao/ Ngamusangum	1	1	2	3	-	-	7	W
26. <i>Garra</i> sp.1	Matrao/ Ngamusangum	-	-	-	-	-	2	2	-
Family: Balitoridae									
Subfamily: Balitorinae									
27. <i>Balitora brucei</i> (Gray)	Lungvap	-	3	-	-	-	-	3	-
Subfamily: Nemacheilinae									
28. <i>Schistura manipurensis</i> (Chaudhuri)	Moremlei/ Khirilei/ Ngatup	7	6	-	15	1	-	29	W, EMN
29. <i>Schistura nagaensis</i> (Menon)	Moremlei/ Khirilei/ Ngatup	-	15	-	5	2	2	24	NrM, EMN
30. <i>Schistura prashadi</i> (Hora)	Moremlei/ Khirilei/ Ngatup	-	1	-	4	-	3	8	EMN
31. <i>Schistura sikmaiensis</i> (Hora)	Moremlei/ Khirilei/ Ngatup	-	-	-	5	-	-	5	-
32. <i>Schistura vinciguerrae</i> (Hora)	Moremlei/ Khirilei/ Ngatup	-	10	-	-	-	-	10	-

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Table 1: Species-wise distribution of fishes in different localities in the northern part of Ukhrul district, Manipur (N is the total number of specimens) (contd.)

Scientific Name	Local Name	Distribution						N	Remarks
		Chingai	Khamsom	Jessami	Thetsi	Tolloi	Tusom CV		
Family: Cobitidae									
Subfamily: Cobitinae									
33. <i>Lepidocephalichthys guntea</i> (Hamilton)	Khutha/ Khirilei/ Ngakijou	1	-	-	2	2	3	8	W
Order: Siluriformes									
Family: Bagridae									
34. <i>Mystus bleekeri</i> (Day)	Khithea/ Ngasep	-	-	-	1	-	-	1	-
Family: Siluridae									
35. <i>Ompok bimaculatus</i> (Bloch)	Khitu/ Ngaten	-	-	1	-	-	-	1	-
Family: Amblycepidae									
36. <i>Amblyceps mangois</i> (Hamilton)	Corelei/ Akhuterapu	3	7	1	6	-	8	25	W
Family: Sisoridae									
37. <i>Glyptothorax manipurensis</i> Menon	Igesha/ Ngapang	-	3	3	4	-	-	10	EMN
38. <i>Glyptothorax</i> sp.1	Igesha/ Ngapang	-	-	-	1	-	-	1	-
39. <i>Glyptothorax</i> sp. 2	Igesha/ Ngapang	-	-	-	1	-	-	1	-
40. <i>Glyptothorax</i> sp. 3	Igesha/ Ngapang	-	-	-	-	-	1	1	-
41. <i>Myersglanis jayarami</i> Vish. & Kosygin	Akhuterapu	-	-	8	-	-	-	8	-
42. <i>Pseudecheneis sulcatus</i> McClelland	Kaparong/ Khikha	-	1	-	-	-	1	2	R
Order: Perciformes									
Family: Channidae									
43. <i>Channa orientalis</i> (Bloch)	Kameikhi/ Meitei Ngamu	3	7	-	3	6	-	19	W
Family: Mastacembelidae									
44. <i>Mastacembelus armatus</i> (Lacépède)	Marui/ Ngaril	5	6	2	2	3	9	27	W, FP

Note: EMN = Endemic in Manipur and Nagaland; Nr M = New record from Manipur; W = Widely distributed; FP = High fishery potential in the study area

high current. In the first two genera, the lateral line perforation curves downward to help the fishes to live in shallow waters. Fishes that inhabited very strong current were found to belong to genera *Pseudecheneis*, *Balitora* and *Myersglanis*. They possess a series of transverse folds on the chest region, which help to attach them to the substratum, so as to withstand strong water currents. The species which were recorded only at low altitude with slower water current represented the genera *Mystus*, *Ompok*, and *Crossocheilus*. However, it is interesting to observe that fishes like *Bangana dero* and *Raiamas guttatus* were found only during June to August. It appears these fish inhabit larger rivers (Chindwin river) in Myanmar and migrate upstream during the monsoon.

The cobitid fish *Schistura nagaensis*, which was known only from Nagaland (India) is collected here for the first time from Manipur (Chindwin drainage). Menon (1987) described the fish from Phodung river in Nagaland. He distinguished it from its closest congeners *S. kangjupkhulensis* Hora (1921) in having 8 branched dorsal fin rays (vs. 7 in *S. kangjupkhulensis*). Kottelat (1990) tentatively considered *S. nagaensis* as a synonym of *S. kangjupkhulensis*, as he doubted the presence of 8 branched dorsal fin-rays in it. Further, he felt that the taxonomic status of *S. nagaensis* should be verified after examining fresh material. During the present study, 24 specimens of *Schistura*, which agree well with the description

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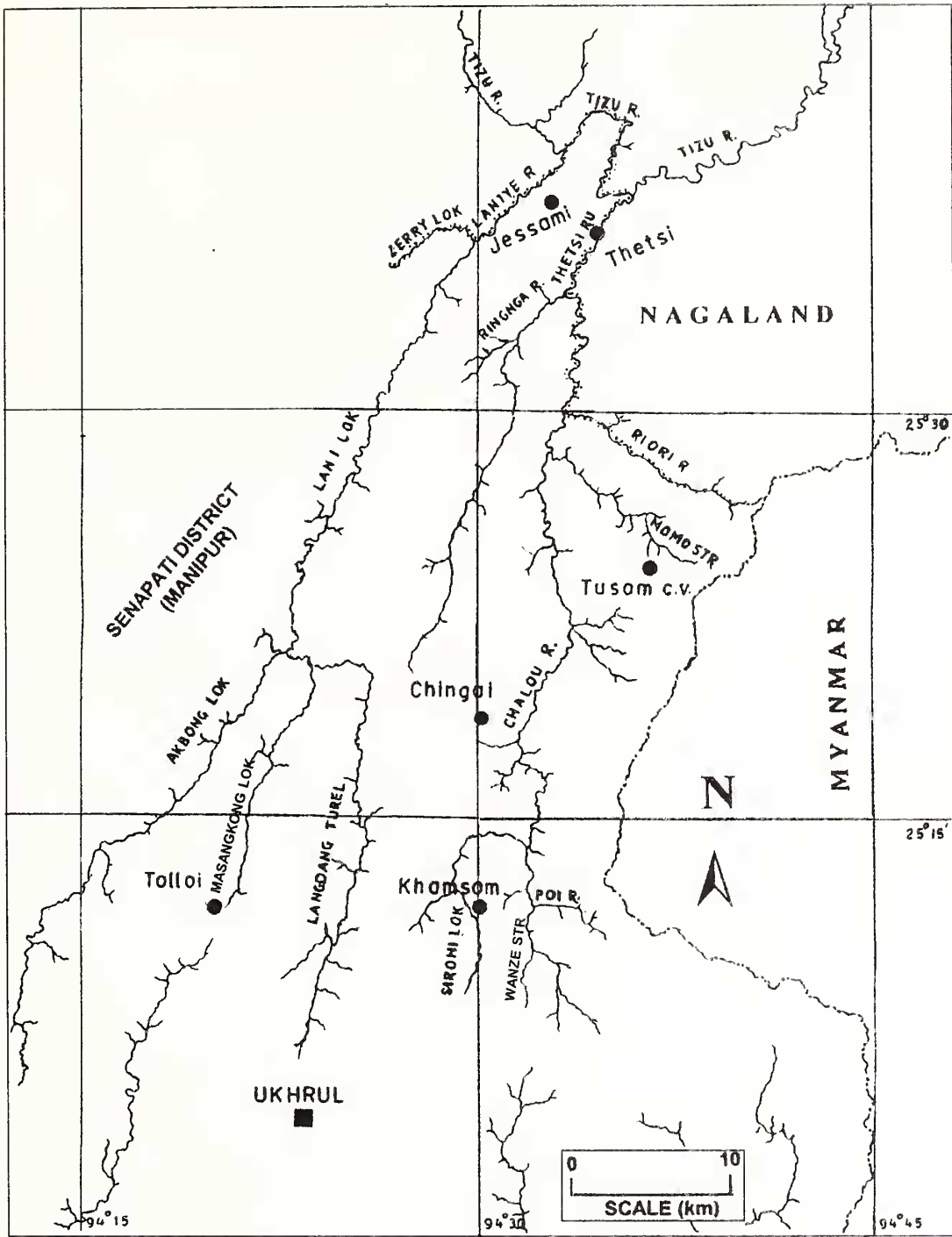


Fig. 1: Map of northern part of Ukhrul district, Manipur, showing drainage and study sites

of *S. nagaensis*, were collected from three different localities which are drained by the Tizu river. All the specimens were found to have 8 branched dorsal fin-rays. Two specimens of *S. nagaensis*, in the Zoological Survey of India (Regn. No. F 10061/1 and F 10067/2), which were collected with the type specimen in 1927, were re-examined and found to have 8 branched dorsal fin-rays. Thus, the presence of 8 branched

dorsal fin-rays is a prominent character of *S. nagaensis* (Menon). The present collection also includes large, commercially important fishes like *Tor tor*, *Neolissochilus hexagonolepis*, *Schizothorax richardsonii*, *Semiplotus manipurensis*, and *Bangana dero*, which inhabit the Himalayan foothills. This shows the potential for hill stream fishery in this part of the State.

Of the 44 species reported here, 26 are also distributed in the Brahmaputra drainage, while 18 species are found only in the Chindwin drainage of Manipur. The 18 species are *Balitora brucei*, *Brachydanio acuticephala*, *Crossocheilus burmanicus*, *Neolissochilus stracheyi*, *Propuntius burtoni*, *Raiamas guttatus*, *Schistura vinciguerrae*, *Schistura nagaensis*, *Schistura prashadi*, *Barilius* sp. *Garra compressus*, *G. elongata*, *Garra* sp. *Glyptothorax* sp.1, *Glyptothorax* sp.2, *Glyptothorax* sp.3, *Myersglanis jayarami*, and *Semiplotus manipurensis*. The restricted distribution of these fishes shows that they evolved in the system comparatively late during the orogenic movements in this part of the world. At present there is no water connection between the Chindwin-Irrawady and Barak-Brahmaputra drainages as they are entirely separated by mountain ranges (Chaudhuri 1919). However, the widely distributed fishes were

probably distributed when there was water connection between the Tsangpo and the Chindwin river as per the post-Himalayan river system hypothesis by Gregory (1925). When a connection between Tsangpo and Ganga-Brahmaputra was established, the fishes might have got distributed to other parts of the country.

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